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ABSTRACT

Noting that the decline in adult newspaper readership does not match the growth in the number of educated adults, a study queried (1) Which characteristics of news items most strongly predict readership levels? and (2) Is there any difference in the best set of predictors for the different age groups (older than and younger than 35)? A readership survey of the November 1, 1985 issue of the Richmond (Virginia) "News Leader" was combined with a content analysis of that issue. In the survey, the 514 respondents indicated whether they had read or noticed each of the 203 items in that issue of the newspaper. The subsequent content analysis of the issue classified each of the news items on 15 content dimensions. The results of the multiple regression analysis indicated that the front page of a section is the key variable in predicting readership for all news items in the paper for both age groups. Other key predictors of readership were topic, source of story, total space, upper half of the page placement, and page number placement. (Notes, references, and tables of data are included.) (HTH)

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Predicting Newspaper Readership from Content Characteristics: A Replication

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Predicting Newspaper Readership from Content Characteristics: A Replication

From 1970 to 1984 the proportion of adults reading a newspaper on a typical day declined from 78.6 percent to 66.6 percent.[1] Yet during this same period. the proportion of adults with at least four years of high school education or more increased from about 50 percent to more than 70 percent.[2] As the growth in newspaper readers has not matched the growth in educated adults. editors have expressed deep concern about the readership of their papers.

Readers spend an average of 25 minutes a day with their newspaper.[3] With this amount of time. they can not read all the news items in the newspaper. Readers do not even notice some news items: they skim many more items; and they read. at best. about a quarter of all the news items in the newspaper.[4]

Which items in the newspaper will win attention? Many variables influence the level of attention an item receives. Among these variables. the structural and content characteristics of items are the elements of communication directly under the editors' control. If accurate prediction of which items will win readers' attention is practicable. this information will be useful to editors in making decisions on the selection and display of news stories. This paper examines the relationship of those structural and content characteristics of news items to readership.

The bulk of research on newspaper readership has dealt with one of two questions: Who reads a newspaper or Why he/she reads it? Studies on demographic identification of readers, life styles related to

readership, and the uses-and-gratifications approach belong to those Audience-oriented perspectives. A relatively small number of studies have employed a Stimulus-oriented perspective. Under the heading of a Stimulus-oriented perspective can be grouped a wide variety of research focusing on the relationship of structural and content attributes of news items to readership. Only a few studies, however, examine content characteristics of ALL the news items in the paper.

As a pioneer in this area, Mauro assessed the relationship of 12 news story characteristics to readership among adults in a major Florida metropolitan area. He examined the variation in news item readership by size of text, position on page, amount of overall space, topic, source of story, geographic significance, readability, size of headline, use of pictures, page placement, use of jumps and form (straight news vs. features, etc.).[5]

McCombs and Mauro extended the Florida study in a newspaper readership survey of Richmond, Va., residents during April 1974. Readership of each of the 199 items in the Richmond *Times-Dispatch* was measured in three ways: noticed, read some and read most. Each item also was coded on 10 content characteristics: page number, form, geographic significance, source, topic, size of headline, use of pictures, size of the text in column inches, quadrant on page, and the total space filled by text, headlines and pictures. Examination of how these content characteristics are related to the three measures of readership across the news items found that page location and amount of space are the key variables in predicting readership for all newshole items. That study also found that under some circumstances the other key content characteristics are geographic significance, form and source.[6]

This research is a replication of the 1974 Richmond study. During the last decade there have been changes both in newspaper readership and the graphics of newspapers. Studies on newspaper readership also show that age is one of the most important demographic variables to predict newspaper readership.[7] Since it appears that younger people are less likely to read newspapers, editors have become concerned with the readership of their papers in the future. As one of the strategies for improving readership, editors have expressed special interest in ways of appealing to the so-called television generation, adults under age 35.

The research questions here are:

- Which characteristics of news items most strongly predict the level of readership?
- Is there any difference in the best set of predictors for the different age groups?

Methodology

To answer these questions a readership survey of the November 1, 1985 issue of the Richmond *News Leader* was combined with a content analysis of that issue. The readership survey was conducted with a random sample of adult residents (18 years of age or more) of the urbanized area of Richmond, Va., on November 2, 1985. A total of 357 personal interviews was completed by professional interviewers. These actual interviews were then weighted to bring representation of the City of Richmond and the counties of Chesterfield and Henrico into proportions which reflected those of the urbanized area. This

procedure resulted in a total of 514 weighted cases, which became the base for analysis. Among 514 cases, 37.5 % were under age 35 and 62.5 % were 35 years of age or more.

Respondents were asked to indicate whether they read or noticed each of the 203 items in that issue of the newspaper. This "Read/noticed" response on listings, stock tables, comic strips and very short news items was used to measure readership. For all other items, however, readership was measured in three ways:

Noticed: read headline only, art-photo only or headline and art only.

Read Some: read some portion of the text.

Read Most: read more than one-half of the text.

These three measures of readership for each item are cumulative and increasingly stringent. Everyone in the "Read Most" group is also in the "Read Some" and "Noticed" groups. Some respondents are only in the "Noticed" group for a particular news story and others are only in the "Noticed" and "Read Some" groups. Data for all three groups are presented because the appropriate criterion for classifying a respondent as a reader will vary among users of this research.

A subsequent content analysis of the November 1, 1985 issue of the Richmond *News Leader* classified each of the news items on 15 content dimensions:[5]

size of headline in points

size of the text in lines

page number

total space in column inches

topic: General News, Business News, Sports News

form: news story, feature, opinions, listings, comics-photos

readability

use of pictures

use of jump

geographic significance: local, state, regional, national, international

source of story: local, bureau, syndicated, AP, UPI, other wire service

position on page: upper, lower

front page of a section

use of byline

use of color

Analysis

To identify the best set of predictors of newspaper readership, the proportion of variation explained by the set, and the relative effect on readership of each predictor, an extensive series of multiple regression analyses were carried out. The dependent variable, readership, was measured in three ways (noticed, read some and read most) for three groups of readers (young, old, and both combined). Readership was further classified by three kinds of content (all items in the newshole, editorial items only and news stories only). Overall,

there were 27 different analyses.[9] Independent variables were fifteen content characteristics. The categories for geographic significance and source of story were collapsed into two categories each. Geographic significance was categorized local-state and other. Source of story was categorized local-staff and other. All ten categorical variables was treated as dummy variables.

The correlation coefficients among fifteen independent variables and readership of all items in the newshole for all readers in the "Noticed" group were calculated first. Since the correlation between total space and the size of text was .776, the size of text was dropped from the analysis. Local-state (geographic significance) and bylines were also deleted from the analysis. for the correlation between local-state and local-staff was .748; the correlation between bylines and headline size was .635. In sum, twelve independent variables were kept for further analysis.

By the RSQUARE procedure in SAS the best seven variables model was selected for each analysis. Form was deleted from the analysis for editorial items only and news stories only. Next, in order to obtain the standardized beta weights of the predictors, the REG procedure in SAS was employed. By this procedure, variables originally measured with different metrics or scales are statistically placed on a common metric. The absolute value of the standardized beta weights indicates the relative importance of each variable as a predictor of readership.

Findings

The best sets of predictors for newspaper readership with their standardized beta weights are presented in Tables 1-3.

The multiple correlation coefficients (R^2) between seven predictor variables and readership range between .642 and .184 across the 27 analyses. For example, the set of local-staff (source of story), page, total space, sports news (topic), listings (form), upper half of the page, and the front page of a section explains 64 % of the variation of readership of all newshole items for the older reader "Noticed" group <see Table 1>. However the combination of page, sports news (topic), local-staff (source of story), the front page of a section, business news (topic), jump, and color explains only 18 % of the variation of readership of editorial items for the older reader "Read Most" group <see Table 2>.

Overall, the correlation coefficients vary with the measures of readership. The more stringent the standard, the lower the correlation. The correlations for "Noticed" groups are always higher than those for "Read Some" and "Read Most" groups. Within each age group and for each set of content, there is a monotonic decline in R^2 as the readership measure increases in stringency.

In order to identify the relative effect on readership of each predictor, we will hold constant one of the three macro-variables (amount read, kind of content, and age of readers) while describing the pattern of important content characteristics across the other two macro-variables as they change value.

When we focus on the kind of content, which content characteristics are the best predictors? The front page of a section is the most important predictor of readership for all items in the newshole <see Table 1>. The "front page of a section" variable enters in all nine sets of the best predictors of readership. The positive sign on the beta weights indicates a positive correlation between the front page of a section and amount of readership for an item. In other words, items on the front page of each section have higher readership than those inside.

The next most important predictor of readership for all newshole items is total space devoted to the item, which appears in all nine sets of the best predictors. The positive correlation between total space and readership for the item shows that larger items have higher readership than smaller ones. The third most important predictor of readership for all newshole items is upper half of the page, which shows up in all nine sets of the best predictors of readership. The positive correlation between this variable and readership indicates that news items in the upper half of page have higher readership than those in the lower half of page.

Beyond these three dominant predictors, the front page of a section, total space and upper half of the page, the important predictors vary across conditions. Generally, the fourth most important predictors of readership are listings (form) and page. Listings appear in seven sets of the best predictors of readership for all newshole items. The negative sign on the beta weights indicates that listings have lower readership than other form of news items, such as news stories or comics. Page also enters in seven regression

models. The negative correlation between page and readership indicates that front page stories have higher readership than those in the back of the paper, with the exception of stories on the front page of each section. In sum, the front page of a section, total space, upper half of the page, form and page are the key predictors of readership for all newshole items.

When we shift our attention to readership for editorial items only, again the front page of a section is one of the key predictors of readership <see Table 2>. The next most common predictor of readership is local-staff (source of story), which enters in all nine regression models. The negative correlation between local-staff and readership indicates that news items written by the local staffs of the newspaper have lower readership than those supplied by wire services, syndicates, etc. The third most common best predictors are page and sports news (topic), which show up in eight regression models. The negative sign on the beta weights shows that sports news have lower readership. In sum, the front page of a section, source of story, page and topic are common to the best predictors of readership for editorial items.

Examination of the regression models for news stories also shows that the front page of a section, local-staff and sports news are the dominant predictors of readership <see Table 3>. Further, business news appears as a key predictor. Business news shows up in all nine sets of the best predictors of readership. The negative correlation between business news and readership indicates that business news has lower readership. The next most common predictor of readership is picture, which enters in seven sets of the best predictors of readership.

The positive correlation between this variable and readership indicates that news stories with a picture have higher readership than those without a picture. In sum, the front page of a section, source of story, topic and picture are common to the regression models of readership for news stories.

Overall, the front page of a section is one of the key predictors of readership for all kinds of content. Beyond the front page of a section, however, the other dominant predictors differ. While total space, upper half of the page and page are common to the best predictors for all newshole items, source of story and topic are common to the best predictors for both editorial items and news stories. Listings is a unique predictor for all newshole items while picture is unique to the common best predictors for news stories.

Next, when we focus our attention on age of readers and vary amount read and kind of content, which predictor variables are important for different age groups? Again the front page of a section is the dominant predictor of readership for each age group. Further, sports news, local-staff and total space appear as the key predictors of readership.

Although there is no difference among the dominant predictors of readership, the regression models for each age group are not the same. The best sets of predictors of readership for the older reader groups are similar to those for all reader groups rather than those for the younger reader groups. For example, while jump and readability are not common to the best predictors for the older reader groups and all reader groups, they are common to the best predictors for the younger reader groups. Page is one of the key predictors of readership for the

older reader groups and all reader groups while it is less common to the best predictors of readership for the younger reader groups. For the older reader groups and all reader groups, front page stories have higher readership than those in the back of the paper. For the younger reader groups, stories with jumps have lower readership than those without jumps; stories with high readability scores, which are easier to read, have lower readership than those with low readability scores.

Focusing finally on the three measures of readership while varying age and kind of content, which content characteristics are the best predictors? Again the front page of a section, sports news, business news, upper half of the page and local-staff appear as the dominant predictors. However the regression models for each measure of readership differ. For example, picture is one of the common predictors for "Noticed" groups; jump is one of the common predictors for "Read Some" and "Read Most" groups; and readability is one of the common predictors for "Read Most" groups.

Discussion

We replicated the 1974 Richmond study in order to examine the relationship of those structural and content characteristics of news items to readership. We performed a readership survey of the November 1, 1985 issue of the Richmond *News Leader* and a content analysis of that issue.

The previous Richmond study found that page location and amount of space are the key variables in predicting readership for all

newshole items. That study also found that under some circumstances the other key content characteristics are geographic significance, form and source. In the present study, we found that the front page of a section is the key variable in predicting readership for all news items in the paper. We found that the other key predictors of readership are topic, source of story, total space, upper half of the page and page.

Is there any change in key predictors of readership during the last decade? Because the content characteristics of news items were not examined in exactly the same way, it is not simple to compare the results of both study. Generally, page location, total space and source of story are still key predictors of readership. Further, the front page of a section, topic and upper half of the page emerge as the key content characteristics while geographic significance and form fade away in the regression models. It seems that the emergence of the front page of a section as a key predictor of readership could be a relief to editors, who have difficulty in selecting news stories for the front page. Since it is evident that news stories on the front page of each section will win attention, editors can ask section editors to move news stories to the front of each section. There is a clear implication here for newspaper design and layout if editors and publishers wish to maximize readership. These findings also offer guidance for layout and design strategies aimed at attracting young readers to the pages of the newspaper.

Finally, the availability of these regression equations for predicting the readership of news items should encourage greater experimentation by editors in selecting and editing material for the

newspaper. Simple computer programs can be written to predict the effects on readership of variations in page placement, size of headline, use of pictures, etc. Or the readership potential of two items competing for the same newshole space could be compared. Newspaper readership can be enhanced through more explicit attention to the content and structural variables, factors which can be directly manipulated by editors.

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Notes

[1]Statistics are based on only adults of 25 years age and over. Simmons Market Research Bureau, *Daily Newspaper Readership Demographic Tables For Total United States, Top 100 Metros and Top 100 DMAS, 1970 & 1984*. (New York: Newspaper Advertising Bureau). p.2.

[2]U.S. Department of Commerce Bureau of the Census, *Statistical Abstract of the United States, 1986*. 106th edition. (Washington. D.C.: Government Printing Office). p.133.

[3]Bill Kirtz. "Some insight into newspaper readers." *Editor & Publisher*. March 15. 1986. p.16.

[4]Citing the 1971 survey data. Bogart reported that average readers read 25 % of all items in the evening papers while they read 24 % of the items in the morning papers. With the 1972 survey data. Mauro and Weaver reported that men read 21 % of all the items in the newspaper while women read 18 % of them. Leo Bogart. *Press and Public*. (Hillsdale. N.J.: Lawrence Erlbaum Associates) 1981. pp.237-238. and John B. Mauro and David H. Weaver. "Patterns of Newspaper Readership." *ANPA News Research Report*. No.4. July 22. 1977. pp.1-4.

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[8]Reading activity was analyzed across 20 topical categories. Three factors emerged from the principal-factor method with varimax rotation. Eigenvalue for "General News" was 7.78 while that for "Business News" and "Sports News" was 1.50 and 1.14, respectively. General News included accident, civic, crime, culture, ecology, education, general service, government, human interest, humor-entertainment, military, social, and space. Business News held business, business service, consumer, labor, and economy. Sports News consisted of sports and sports service.

[9]Since readership on listings, stock tables, comic strips and very short news items was measured in only one way, "read/noticed" or not, "read/noticed" response was considered as the response of both "Read Some" and "Read Most". In order words, for listings, etc., everyone in the "Noticed" group is also in the "Read Some" and "Read Most" groups.

Table 1: Standardized Beta Weights for Content Characteristics Used to Predict Readership of All Newshole Items

	Noticed	Read Some	Read Most
Young Only			
	(R^2=.5787)	(R^2=.3803)	(R^2=.3831)
Space	0.272	0.245	0.191
Sports	-0.134		
Opinions	-0.147		
Listings	-0.367		
Upper	0.215	0.206	0.191
Front of section	0.401	0.402	0.437
Picture	0.166		
Page		-0.137	
Story		0.233	0.270
Comics-Photos		0.457	0.415
Headline size		-0.212	
Jump			-0.211
Readability			-0.279
Old Only			
	(R^2=.6422)	(R^2=.4323)	(R^2=.3769)
Page	-0.260	-0.222	-0.238
Space	0.409	0.332	0.281
Sports	-0.246	-0.199	-0.184
Listings	-0.353	-0.381	-0.353
Local-staff	-0.114		
Upper	0.162	0.198	0.231
Front of section	0.330	0.328	0.250
Headline size		-0.380	-0.454
All			
	(R^2=.6307)	(R^2=.4061)	(R^2=.3708)
Page	-0.192	-0.257	-0.291
Space	0.410	0.284	0.222
Sports	-0.199		
Listings	-0.355	-0.309	-0.241
Local-staff	-0.131		
Upper	0.190	0.213	0.235
Front of section	0.378	0.377	0.289
Comics-Photos		0.225	0.289
Headline size		-0.351	-0.402

* The number of all newshole items is 203 for each group.

Table 2: Standardized Beta Weights for Content Characteristics Used to Predict Readership of Editorial Items

	Noticed	Read Some	Read Most
Young Only			
	(R^2=.6289)	(R^2=.2887)	(R^2=.2164)
Page	-0.270	-0.099	
Space	0.305	0.139	
Sports		-0.170	-0.229
Business		-0.101	-0.106
Local-staff	-0.139	-0.218	-0.251
Upper	0.213		
Front of section	0.521	0.448	0.358
Picture	0.273		
Jump	-0.161	-0.155	-0.296
Headline size			0.117
Readability			-0.092
Old Only			
	(R^2=.5951)	(R^2=.2807)	(R^2=.1843)
Page	-0.280	-0.115	-0.103
Space	0.314	0.135	
Sports	-0.343	-0.293	-0.322
Business		-0.068	-0.084
Local-staff	-0.161	-0.107	-0.168
Upper	0.084		
Front of section	0.374	0.301	0.150
Picture	0.089		
Jump			-0.067
Headline size		-0.102	
Color			0.051
All			
	(R^2=.6196)	(R^2=.2860)	(R^2=.1950)
Page	-0.257	-0.101	-0.112
Space	0.343	0.096	
Sports	-0.257	-0.264	-0.276
Business		-0.085	-0.096
Local-staff	-0.170	-0.169	-0.215
Upper	0.136		
Front of section	0.393	0.326	0.287
Picture	0.149		
Jump			-0.193
Color		0.051	
Readability			-0.059

* The number of editorial items is 83 for each group.

Table 3: Standardized Beta Weights for Content Characteristics Used to Predict Readership of News Stories

	Noticed	Read Some	Read Most
Young Only			
	(R^2=.5695)	(R^2=.3135)	(R^2=.2990)
Space	0.241	0.102	
Sports	-0.413	-0.324	-0.307
Business	-0.289	-0.193	-0.182
Local-staff	-0.174	-0.136	-0.203
Front of section	0.292	0.323	0.432
Picture	0.192		
Headline size	0.151		
Readability		-0.097	-0.147
Upper		-0.091	-0.083
Jump			-0.341
Old Only			
	(R^2=.6244)	(R^2=.3358)	(R^2=.2634)
Page	-0.191		
Space			-0.131
Sports	-0.419	-0.352	-0.357
Business	-0.148	-0.129	-0.130
Local-staff	-0.176	-0.060	-0.164
Front of section	0.316	0.184	0.138
Picture	0.232	0.102	0.133
Readability	0.291		
Jump		0.159	
Upper		-0.153	-0.152
All			
	(R^2=.6200)	(R^2=.3329)	(R^2=.2748)
Page	-0.174		
Space	0.350		
Sports	-0.447	-0.322	-0.347
Business	-0.205	-0.155	-0.152
Local-staff	-0.118	-0.104	-0.162
Front of section	0.302	0.290	0.286
Picture	0.145	0.085	0.051
Jump		0.073	-0.195
Upper		-0.106	-0.147

* The number of news stories for "Noticed" groups is 76 while that for "Read Some" and "Read Most" groups is 46, respectively.